

## Test Objectives

### Network Fundamentals

- 3.1.1 Identify different types of networks.
- 3.1.2 Outline the importance of standards in the construction of networks.
- 3.1.3 Describe how communication over networks is broken down into different layers.
- 3.1.4 Identify the technologies required to provide a VPN.
- 3.1.5 Evaluate the use of a VPN.

### Data Transmission

- 3.1.6 Define the terms: protocol, data packet.
- 3.1.7 Explain why protocols are necessary.
- 3.1.8 Explain why the speed of data transmission across a network can vary.
- 3.1.9 Explain why compression of data is often necessary when transmitting across a network.
- 3.1.10 Outline the characteristics of different transmission media.
- 3.1.11 Explain how data is transmitted by packet switching.

**Wireless Network** - will not be on Monday's quiz

# Network Review

## Practice Questions

1. Explain one advantage of a star network topology over a bus network topology. [2 marks]
2. Identify one advantage and one disadvantage of using a WAN over a LAN. [2 marks]
3. Define client-server. [2 marks]
4. State if the following data stream has been received correctly, assume the most significant bit (MSB) is an even parity bit. [1 mark] 1000 0101 1101 1101
5. Outline one key task a packet switched network protocol must be able to achieve. [2 marks]
6. In relation to data transmission across a network: Define the term data security. [1 mark]  
Explain a way to ensure data security. [2 marks]
7. State one advantage and one disadvantage of using fiber optics to carry data in a network. [2 marks]
8. Discuss the term peer-to-peer in a LAN environment. [2 marks]
9. Explain how the use of check sums could ensure that data integrity is maintained during the transmission of text. [2 marks]
10. A small company uses a LAN (local area network) with a star topology. The LAN connects three PCs and a printer to a server and allows access to the Internet. Additionally, users will be able to access the server remotely and be able to use email.
  - a. State the name of a hardware component required to link the LAN to the World Wide Web (WWW). [1 mark]
  - b. Draw and label a diagram to show the components of the new network. [3 marks]
  - c. Explain one external threat to security that arises from the connection to the WWW. [2 marks]
  - d. Explain a way to protect against the above external security threat. [2 marks]
  - e. Outline why email poses a potential threat to data integrity. [2 marks]